

**PATENT APPLICATION**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q65726

Yasuharu YOSHIDA

Appln. No.: 09/921,714

Group Art Unit: 2617

Confirmation No.: 8770

Examiner: Matthew W. GENACK

Filed: August 6, 2001

For: ON-VEHICLE RADIO COMMUNICATION EQUIPMENT, A DEDICATED SHORT RANGE COMMUNICATION SYSTEM, AND ON-VEHICLE RADIO COMMUNICATION METHOD

**SECOND REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.43(b)**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.43(b), Appellant respectfully submits this Second Reply Brief in response to the Examiner's Response dated January 14, 2008. Entry of this Second Reply Brief is respectfully requested.

**Table of Contents**

STATUS OF CLAIMS .....	2
GROUND OF REJECTION TO BE REVIEWED ON APPEAL .....	3
ARGUMENT .....	4
CONCLUSION .....	9

**STATUS OF CLAIMS**

Claims 1-13 are pending, have been rejected, and are the subject of this appeal.

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

**Ground 1**

Claims 1, 3, 5, 6, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,275,552 to Ando (hereinafter “Ando”) in view of U.S. Patent No. 5,806,002 to Wiatrowski (hereinafter “Wiatrowski”).

**Ground 2**

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando in view of Wiatrowski.

**Ground 3**

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando in view of Wiatrowski.

**Ground 4**

Claims 8, 10, 12 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando in view of Wiatrowski.

**Ground 5**

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ando in view of Wiatrowski.

**Ground 6**

Claim 11 stands under 35 U.S.C. § 103(a) as being unpatentable over Ando in view of Wiatrowski.

**ARGUMENT**

In addition to the arguments set forth in the Appeal Brief as filed on January 30, 2007, and the Reply Brief as filed on September 27, 2007, Appellants respond to certain points made in the Examiner's Response to Appellant's Arguments, of January 14, 2008, as follows:

(I) In the Reply Brief, at pages 7-8, the Examiner asserted that Appellant "ignores the possibility of scenarios where there exist a plurality of classes or drivers using the tollgate system, each class of drivers having different needs (different lanes for different speeds, for instance) and different obligations obligations (different tolls for different vehicle classes, for instance). Therefore, the frequency switching capabilities of Wiatrowski *et al.* do not introduce needless complexity into the system of Ando." (*sic.*) In response, Appellant noted that such "scenarios" are not taught or suggested by either Ando or Wiatrowski. Thus, such scenarios would not have been contemplated by one of skill in the art based on the cited references. Further, the Ando system is based on a time-division multiple access method in order to handle the multiple vehicles and different lanes of traffic. Thus, even if such scenarios were contemplated, based on the teachings of the cited references, one of skill in the art at the time of the present invention would foremost seek a solution within the disclosed time-division multiple access method.

In the Examiner's Response, at page 2, the Examiner notes that Ando, at col. 4, lines 27-36, describes that there are multiple lanes of traffic and that there is an antenna unit for each lane of traffic. This is true. However, as previously discussed by Appellants, Ando's teaching of multiple lanes of traffic, is already dealt with in the Ando time-division multiple access system. Such multiple lanes of traffic, in the context of the time-division multiple access method would not have motivated one of skill in the art at the time of the present invention to create an entirely new and increasingly complex system based not on time-division multiple access, but rather on a completely different system based on a scanning of multiple frequencies at specified ratios as in the present invention.

**(II)** In the Examiner's Response, at page 2, the Examiner asserts that "modifying the RSE of Ando so that a plurality of frequencies are used for transmissions from the plurality of OBEs to the RSE need not require an integrated circuit that is of a size not suitable for mounting because Ando only states that the circuit must be 'more simplified and reduced in size for mounting' but does not provide a frame of reference for this statement, not any range of acceptable quantities, nor any indication that the requirements for mounting the integrated circuit preclude the possibility of frequency switching."

The fact that Ando has not described any detailed specifications regarding a size of the circuit does not change the fact that the two clearly-defined goals of the Ando system are: 1) providing an apparatus and circuit which are simplified and reduced in size<sup>1</sup>; and 2) providing a system which can operate in a very short communication time.<sup>2</sup>

A modification of the Ando system, as suggested by the Examiner, to incorporate the use of multiple transmission frequencies would require a wholesale reworking of the Ando system and apparatus including the addition of components such as new and more stable oscillators, associated phase locked loop (PLL) circuitry including frequency dividers for the oscillator and feedback signals, filter components and shielding to filter the signals and address increased noise. Such a modification would also required a longer communication time in switching between frequencies. Thus one of skill in the art at the time of the present invention would not have been motivated to modify the Ando system in this way as such a modification would clearly contravene the goals of a smaller and simplified circuit and a short communication time.

**(III)** In the Examiner's Response, the Examiner quotes Ando, which describes: "The MDS is multiplexed using transmission channels, each of which uses a different frequency for

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<sup>1</sup> Ando, col. 2, lines 56-57; col. 2, lines 66-67.

<sup>2</sup> Ando, col. 1, lines 34-48; col. 1, lines 53-56; col. 7, lines 2-4; col. 7, lines 38-40; col. 7, lines 42-44; col. 11, lines 17-20.

the down-link and for the up-link.”<sup>3</sup> The Examiner asserts that this statement requires there to be multiple transmission channels where each transmission channel uses a down-link frequency which is different from the down-link frequency of all other channels and where each transmission channel uses an up-link frequency which is different from the up-link frequency of all other channels. The Examiner is clearly mistaken. There is no teaching or suggestion in Ando which supports this interpretation. Rather, Ando specifically describes that the RSE has a single transmission (downlink) frequency f1 and a single reception frequency f2.<sup>4</sup>

The use of only a single transmission frequency and a single reception frequency is supported by Figure 2, which illustrates that an RSE is designed to handle only a single transmission frequency f1 and a single reception frequency f2, and similarly, that an OBE is designed to handle only a single reception frequency f1 and a single transmission frequency f2. If the Examiner’s interpretation were correct, and there were multiple transmission frequencies from one or more RSE, then each OBE would require circuitry to receive multiple frequencies or to scan received frequencies for an appropriate frequency. This is not the case.

(IV) In the Examiner’s Response, at page 3, in response to the Appellant’s contention that one of skill in the art would not be motivated to modify Ando by contravening the clearly stated goal of simplifying the system circuitry (decreasing complexity), the Examiner notes: “Examiner points out that complexity is but one factor in engineering design, and that the Examiner’s statement in the Examiner’s Answer (that engineering solutions often involve trade-offs), referred to the possibility that it may be acceptable engineering practice to increase complexity if some other factor(s) is/are improved. Appellant equates ‘engineering solutions often involve trade-offs’ with the notion that complexity must be reduced in this particular instance, when this is the exact opposite of the point that was made in the Examiner’s Answer.”

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<sup>3</sup> Ando, col. 8, lines 40-42.

<sup>4</sup> Ando, col. 5, lines 13-22.

Appellant respectfully note that the Examiner's assertion is clear. The Examiner contends, as in the Examiner's Answer, that in this case, the complexity of the Ando system may be increased to achieve a system that can operate with multiple transmission frequencies.

As discussed above, whether or not an increase in system complexity is an acceptable engineering practice is irrelevant. What is relevant is that Ando specifically and clearly states the goals of simplifying circuitry and achieving a very short communication time, and that modifying the Ando system to achieve a system that can operate with multiple transmission frequencies contravenes both these goals, as discussed above. Therefore, one of skill in the art at the time of the present invention would never have modified Ando in this way based on the teachings of the cited references and the knowledge of one of skill in the art.

(V) In the Examiner's Response, at pages 3-4, the Examiner asserts that "there is no explicit statement in Ando that frequency switching may not be used with this invention, and there is also indication that multiple frequencies are used". Appellant submits that this issue is addressed above.

(VII) In the Examiner's Response, at page 4, the Examiner asserts that "The presence of squelch criteria for both high speed and low speed binary signals indicates that both high speed and low speed links are established in the invention of Wiatrowski."

In response, Appellant notes that the squelch rules are not relevant to a high speed link establishment and a non high-speed link establishment, as claimed. Rather, they merely require a detection of a low speed or high speed signal.

(VIII) In the Examiner's Response at page 4, the Examiner asserts that "the demodulation type is changed from digital to analog, as per the table in Column 9<sup>5</sup>, whereby the non-priority channel has a first frequency and the priority channel has a second frequency (Abstract)."

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<sup>5</sup> Wiatrowski.

The table in column 9 clearly specifies that for every channel listed from Ch. 1 through Ch. 16, the reception frequency is A and the transmission frequency is B. The Examiner asserts that the use of “A” and “B” merely clarifies that the transmission frequency is different from the reception frequency, and that an “A” reception frequency may be one of any number of frequencies, and that a “B” transmission frequency may be one of any number of frequencies.


If this were the case, then the listing of reception and transmission frequencies in the table in column 9 would be meaningless, because the Examiner would have us assume that listing a reception frequency as “A” does not actually specify the frequency, but merely means that it is a reception frequency, and that listing a transmission frequency as “B” does not actually specify the frequency, but merely means that it is a transmission frequency. If this were the case, the table in column 9 would be completely redundant.



**CONCLUSION**

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,



Laura Moskowitz  
Registration No.: 55,470

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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